



# **REGULATIONS**

Regulations Effective February 15, 2001

Fees Effective December 1, 2004

# **STATUTES**

Title 54.1, Chapter 23



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## **NOTICE**

### **SUMMARY OF SIGNIFICANT CHANGES**

The regulations in this booklet became effective on February 15, 2001. Many of the changes implement the mandates of the "Environment Protection Agency: Final Guidelines for the Certification and Recertification of the Operators of Community and Nontransient Noncommunity Public Water Systems; Notice." A copy of Chapter 23 of Title 54.1 of the Code of Virginia as amended appears under the heading "Code of Virginia." These regulations replace the regulations that became effective on August 27, 1992. As a regulant of the Board for Waterworks and Wastewater Works Operators, you are responsible for following all regulations and therefore you should read and become familiar with all of the regulation provisions in this booklet.

The fees in this booklet became effective on December 1, 2004. There are no other changes to the regulations that became effective on February 15, 2001.

## **STATEMENT OF PURPOSE**

This booklet contains the information you will need to obtain a Virginia Waterworks or Wastewater Works Operators License. The law that governs your profession is found in the Code of Virginia, 1950, as amended, in Title 54.1, Chapter 23. The law permits the Board for Waterworks and Wastewater Works Operators to promulgate regulations that tell you more about what is expected of you in your profession. This booklet contains a copy of the law and regulations that you will need to know and obey to get and keep your license. **BE SURE YOU READ AND UNDERSTAND THE STANDARDS OF PRACTICE. YOUR FAILURE TO OBEY THESE STANDARDS COULD RESULT IN A MONETARY PENALTY OR THE LOSS OF YOUR LICENSE.**

It is the goal of the Department of Professional and Occupational Regulation to provide you with the information you need to comply with the law and regulations. If you have a question and cannot find the answer to it in the booklet or examination vendor is unable to provide you an answer, please write to:

Virginia Board for Waterworks and Wastewater Works Operators  
Department of Professional and Occupational Regulation  
3600 West Broad Street  
Richmond, VA 23230-4917

or contact the Agency by telephone at (804) 367-2176 or by e-mail at [waterwasteoper@dpor.virginia.gov](mailto:waterwasteoper@dpor.virginia.gov).

Copies of the law and regulations mentioned above, as well as copies of the application forms needed to apply for a license, may be found on the Department's web site at [www.dpor.virginia.gov](http://www.dpor.virginia.gov).

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# **VIRGINIA BOARD FOR WATERWORKS AND WASTEWATER WORKS OPERATORS**

## **REGULATIONS**

### **PART I.**

#### **GENERAL.**

##### **18 VAC 160-20-10. Definitions.**

The following words and terms when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise:

“Board” means the Board for Waterworks and Wastewater Works Operators.

“Category” means the two divisions of waterworks and wastewater works operators' licenses, one being waterworks and the second being wastewater works.

“Classification” means the divisions of each category of waterworks and wastewater works operators' licenses into classes where Class “I” represents the highest classification.

“Contact hour” means 50 minutes of participation in a structured training activity.

“Continuing Professional Education (CPE)” means participation in a structured training activity that enables a licensed waterworks operator to maintain and increase the competence required to assure the public's protection.

“Department” means the Virginia Department of Professional and Occupational Regulation.

“Experience” means time spent learning how to physically and theoretically operate the waterworks or wastewater works as an operator-in-training or time spent operating a waterworks or wastewater works for which the operator is currently licensed.

“Licensed operator” means an operator with a license in the category and with a classification equal to or higher than the classification of the waterworks or wastewater works being operated.

“Licensee” means an individual holding a valid license issued by the board.

“Licensure” means a method of regulation whereby the Commonwealth, through the issuance of a license, authorizes a person possessing the character and minimum skills to

engage in the practice of a profession or occupation that is unlawful to practice without a license.

“Operate” means any act of an individual, which may impact on the finished water quality at a waterworks or the plant effluent at a wastewater works.

“Operating staff” means individuals employed or appointed by an owner to work at a waterworks or wastewater works.

“Operator” means any individual employed or appointed by any owner, and who is designated by such owner to be the person in responsible charge, such as a supervisor, a shift operator, or a substitute in charge, and whose duties include testing or evaluation to control waterworks or wastewater works operations. Not included in this definition are superintendents or directors of public works, city engineers, or other municipal or industrial officials whose duties do not include the actual operation or direct supervision of waterworks or wastewater works.

“Operator-in-training” means an individual employed by an owner to work under the direct supervision and direction of an operator holding a valid license in the proper category and classification for the purpose of gaining experience and knowledge in the duties and responsibilities of an operator of a waterworks or wastewater works. An operator-in-training is not an operator.

“Owner” means the Commonwealth of Virginia, or any political subdivision thereof, any public or private institution, corporation, association, or any other entity organized or existing under the laws of this Commonwealth or of any other state or nation, or any person or group of persons acting individually or as a group, who own, manage, or maintain waterworks or wastewater works.

“Renewal” means continuing the effectiveness of a license for another period of time.

“Responsible charge” means the designation by the owner of any individual to have the duty and the authority to operate a waterworks or wastewater works.

“Structured training activity” means a formal educational process designed to permit a participant to learn a given subject or subjects through interaction with an instructor in a course, seminar, conference or other performance-oriented format.

“Wastewater works” means a system of (i) sewerage systems or sewage treatment works serving more than 400 persons, as set forth in § 62.1-44.18 of the Code of Virginia; (ii) sewerage systems or sewage treatment works serving fewer than 400 persons, as set forth in § 62.1-44.18 of the Code of Virginia, if so certified by the State Water Control Board; and (iii)

facilities for discharge into state waters of industrial wastes or other wastes, if certified by the State Water Control Board.

“Waterworks” means a system that serves piped water for drinking or domestic use to (i) at least 15 connections or (ii) at least 25 of the same individuals for more than six months out of the year. The term waterworks shall include all structures, equipment, and appurtenances used in the storage, collection, purification, treatment and distribution of pure water, except the piping and fixtures inside the building where such water is delivered.



## **PART II.**

### **LICENSE REQUIREMENTS.**

#### **18 VAC 160-20-74. License required.**

To serve as an operator of a waterworks or wastewater works, it shall be necessary to hold a valid license issued by the board for a classification equal to or greater than the classification of the waterworks or wastewater works to be operated and in the appropriate category. Issuance of a new classification of license shall void all previously issued licenses in the same category. No licensee shall hold two licenses of different classifications in the same category. The board shall issue a license only after an individual has met all experience and examination requirements as set forth in this chapter.

#### **18 VAC 160-20-76. Application.**

- A. Individuals desiring to be issued a license shall apply on forms supplied by the board. The application shall be completed according to the instructions provided with the application. Incomplete applications will be returned to the applicant. Fees shall remain valid for 90 days and shall not be refunded.
- B. Individual applicants shall be at least 18 years of age.
- C. The applicant shall disclose the following information about himself:
  - 1. Any conviction by a court in any jurisdiction of any felony or of any misdemeanor involving lying, cheating or stealing, or of any misrepresentation while engaged in waterworks or wastewater works activities. Any plea of nolo contendere shall be considered a conviction for purposes of this subsection. A certified copy of a final order, decree or case decision by a court or regulatory agency with the lawful authority to issue such order, decree or case decision shall be prima facia evidence of such conviction or discipline.
  - 2. Any disciplinary action taken by the board or another jurisdiction in connection with the applicant's activities as a waterworks or wastewater works operator, including but not limited to, monetary penalties, fines, suspension, revocation, or surrender of a license in connection with a disciplinary action.
  - 3. His physical address. A post office box shall not be accepted in lieu of a physical address.

D. The fee established by 18 VAC 160-20-102 shall accompany the application and shall not be refunded.

E. The receipt of an application and the deposit of fees in no way indicates approval of the application by the board.

**18 VAC 160-20-80. Individuals certified or licensed in other jurisdictions.**

Any applicant holding a valid license or certificate in another jurisdiction who meets the requirements of this chapter, including experience and education, may take the examination in the Virginia category and classification comparable to the license or certificate held in the other jurisdiction.

**18 VAC 160-20-85. Restricted License of Class VI Waterworks.**

A. The board shall issue a restricted license to operate a Class VI waterworks to the Class VI waterworks owner or the Class VI waterworks owner's designee upon application for such restricted license by the waterworks owner or his designee and provided said application is received by February 15, 2003. Waterworks owners or their designees who fail to apply by February 15, 2003, must apply for a license pursuant to 18 VAC 160-20-90. A restricted license shall be limited to one license per Class VI waterworks facility. The restricted license is site specific and nontransferable. The restricted license expires three years from the date of issuance and is not subject to renewal.

B. Each applicant for a restricted license to operate a Class VI waterworks shall apply on the application form provided by the board which establishes that the applicant:

1. Is at least 18 years of age;
2. Has a high school diploma or G.E.D. and six months experience, or has no high school diploma or G.E.D. and has 12 months experience;
3. Is the current operator of a specific Class VI system and does not hold a waterworks license issued by the board; and
4. Understands that the restricted Class VI license that may be issued becomes invalid if he leaves the facility for which the license is sought or is issued a waterworks operator license in any other class.

## **18 VAC 160-20-90. Licensure by experience and examination.**

Licensure is based upon having applicable experience and demonstrating minimum required knowledge, skills and abilities through an examination. Education, training, and experience in the other category may be substituted for the required experience as specified in this section.

A. Experience. For purposes of this chapter, experience requirements are expressed in terms of calendar periods of full-time employment as an operator or as an operator-in-training at a waterworks or wastewater works in the same category as the license being applied for. All experience claimed on the application for licensure must be certified by the individual's immediate supervisor.

1. A year of full-time employment is defined as a minimum of 1,760 hours during a 12-month period or a minimum of 220 workdays in a 12-month period. A workday is defined as attendance at a waterworks or wastewater works to the extent required for proper operation. More than 1,760 hours or 220 work days during a 12-month period will not be considered as more than one year of full-time employment.
2. Experience gained as an operator-in-training must be obtained under the supervision of an operator holding a valid license of the same category and of a classification equal to or higher than the classification of the waterworks or wastewater works at which the experience is gained. The supervising operator shall certify the experience on the application form as accurate and relevant to the classification and category of license for which the application is being submitted.
3. Partial credit may be given for actual hours of work or workdays experience if the applicant works as an operator or as an operator-in-training less than full time.
4. Experience solely limited to the operation and maintenance of wastewater collection systems and water distribution systems, laboratory work, plant maintenance, and other nonoperating duties shall not be counted as experience as an operator or as an operator-in-training.
5. Experience limited to water distribution system operation and maintenance shall be considered only when applying for a Class V or Class VI waterworks operator license.

B. Specific requirements for licenses.

1. Specific requirements for a Class VI license. Applicants for licensure as a Class VI waterworks operator shall meet one of the following requirements and pass a board-approved examination:

- a. Have (i) a high school diploma or GED and (ii) at least six months of experience as an operator-in-training in a Class VI, Class V, Class IV, Class III, Class II, or Class I waterworks; or
  - b. Have (i) no high school diploma and (ii) at least one year of experience as an operator-in-training in a Class VI, Class V, Class IV, Class III, Class II, or Class I waterworks.
2. Specific requirements for a Class V license. Applicants for licensure as a Class V waterworks operator shall meet one of the following requirements and pass a board-approved examination:
  - a. Have (i) a high school diploma or GED and (ii) at least six months of experience as an operator-in-training in a Class V, Class IV, Class III, Class II, or Class I waterworks; or
  - b. Have (i) no high school diploma and (ii) at least one year of experience as an operator-in-training in a Class V, Class IV, Class III, Class II, or Class I waterworks.
3. Specific requirements for a Class IV license. Applicants for licensure as either a Class IV waterworks or wastewater works operator shall meet one of the following requirements and pass a board-approved examination:
  - a. Have (i) a high school diploma or GED and (ii) at least six months of experience as an operator-in-training in a Class IV, Class III, Class II, or Class I waterworks or wastewater works (as appropriate); or
  - b. Have (i) no high school diploma and (ii) at least one year of experience as an operator-in-training in a Class IV, Class III, Class II, or Class I waterworks or wastewater works (as appropriate).
4. Specific requirements for a Class III license. Applicants for licensure as either a Class III waterworks or wastewater works operator shall meet one of the following requirements and pass a board-approved examination:
  - a. Have (i) a bachelor's degree in engineering or engineering technology, or in physical, biological or chemical science; and (ii) at least one year of experience as an operator-in-training in a Class IV, Class III, Class II, or Class I waterworks or wastewater works (as appropriate); or

- b. Have (i) a bachelor's degree in engineering or engineering technology, or in physical, biological or chemical science; (ii) a Class IV license; and (iii) a total of at least one year of experience as an operator or operator-in-training in a Class IV waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class III, Class II, or Class I waterworks or wastewater works (as appropriate); or
  - c. Have (i) a high school diploma or GED and (ii) at least two years of experience as an operator-in-training in a Class IV, Class III, Class II, or Class I waterworks or wastewater works (as appropriate); or
  - d. Have (i) a high school diploma or GED, (ii) a Class IV license, and (iii) a total of at least two years of experience as an operator or operator-in-training in a Class IV waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class III, Class II, or Class I waterworks or wastewater works (as appropriate); or
  - e. Have (i) no high school diploma, (ii) a Class IV license, and (iii) a total of at least four years of experience as an operator or operator-in-training in a Class IV waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class III, Class II, or Class I waterworks or wastewater works (as appropriate).
5. Specific requirements for a Class II license. Applicants for licensure as either a Class II waterworks or wastewater works operator shall meet one of the following requirements and pass a board-approved examination:
- a. Have (i) a bachelor's degree in engineering or engineering technology, or in physical, biological or chemical science; and (ii) a total of at least 1-1/2 years of experience, of which at least six months without substitutions shall be as an operator-in-training in a Class III, Class II or Class I waterworks or wastewater works (as appropriate); or
  - b. Have (i) a bachelor's degree in engineering or engineering technology, or in physical, biological or chemical science; (ii) a Class IV license; and (iii) a total of at least 1-1/2 years of experience, of which at least six months without substitutions shall be as an operator-in-training in a Class III, Class II or Class I waterworks or wastewater works (as appropriate); or
  - c. Have (i) a bachelor's degree in engineering or engineering technology, or in physical, biological or chemical science; (ii) a Class III license; and (iii) a total of at least 1-1/2 years of experience, of which at least six months, without substitutions shall be as an operator or operator-in-training in a Class III waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class II or Class I waterworks or wastewater works (as appropriate); or

- d. Have (i) a high school diploma or GED, (ii) a Class III license, and (iii) a total of at least four years of experience of which at least two years without substitutions shall be as an operator or operator-in-training in a Class III waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class II or Class I waterworks or wastewater works (as appropriate); or
  - e. Have (i) no high school diploma, (ii) a Class III license, and (iii) a total of at least seven years of experience of which at least three years without substitutions shall be as an operator or operator-in-training in a Class III waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class II or Class I waterworks or wastewater works (as appropriate).
6. Specific requirements for a Class I license. Applicants for licensure as either a Class I waterworks or wastewater works operator shall meet one of the following requirements and pass a board-approved examination:
- a. Have (i) a bachelor's degree in engineering or engineering technology, or in physical, biological or chemical science; (ii) a Class II license; and (iii) a total of at least 2-1/2 years of experience, of which at least one year without substitutions shall be as an operator or operator-in-training in a Class II waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class I waterworks or wastewater works (as appropriate); or
  - b. Have (i) a high school diploma or GED, (ii) a Class II license and (iii) a total of at least six years of experience of which at least two years without substitutions shall be as an operator or operator-in-training in a Class II waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class I waterworks or wastewater works (as appropriate); or
  - c. Have (i) no high school diploma, (ii) a Class II license, and (iii) a total of at least 10 years of experience of which at least three years without substitutions shall be as an operator or operator-in-training in a Class II waterworks or wastewater works (as appropriate) or as an operator-in-training in a Class I waterworks or wastewater works (as appropriate).
- C. Substitutions for required experience. For the purpose of meeting the experience requirements for Class III, Class II, and Class I licenses, experience in the other category, relevant training in waterworks and wastewater works operation, and formal education may be substituted for actual hands-on experience in the category being applied for.

1. Category experience substitution. One half of the actual experience gained in the other category may be substituted for required experience in the category of the license being applied for.
2. Education substitution. Education may be substituted for part of the required experience in the category of the license being applied for, subject to the following limitations:
  - a. Education used to meet the educational requirements for any class of license may not be substituted for experience.
  - b. Formal education courses at a post-secondary level in physical, biological or chemical science; engineering or engineering technology; waterworks or wastewater works operation; or public health may be substituted for part of the required experience.
    - (1) All education substituted for experience must be relevant to the category and classification of the license being applied for.
    - (2) Education may be substituted for experience at a rate of up to one month experience for each semester hour of college credit approved by the board. One quarter hour of college credit will be considered equal to two thirds of a semester hour.
    - (3) Substitution of formal education experience will be approved by the board only for applicants who submit a transcript from the institution where the course was taken.
  - c. Training substitution. Waterworks or wastewater works operator training courses, seminars, workshops, or similar training, specifically approved by the board, may be substituted for part of the required experience.
    - (1) All training substituted for experience must be relevant to the category and classification of the license being applied for.
    - (2) Training may be substituted for experience at a rate of one month experience for each training credit approved by the board. Up to one training credit is awarded for each 10 hours of classroom contact time or for each 20 hours of laboratory exercise and field trip contact time. No credit towards training credits is granted for breaks, meals, receptions, and time other than classroom, laboratory and field trip contact time.

- (3) All courses used for substitution must be approved by utilizing the criteria set forth in Part VI (18 VAC 160-20-160) of this chapter.
    - (4) Substitution of training for experience will be approved by the board only for applicants who submit a copy of an appropriate certificate identifying the subject matter of the course and the training credit value, and signed by a representative of the organization sponsoring the training.
  3. Limitations on substitution.
    - a. Under no circumstances shall category experience, education, and training substitutions exceed 50% of the total experience required under this subsection.
    - b. No category experience, education, or training substitutions are permitted for the experience required to obtain a Class VI, Class V or a Class IV license as specified in subsection B of this section.
- D. Examination. A board-approved examination shall be administered at least twice a year.
  1. An individual may take the examination prior to fulfilling the education and experience requirements, provided all requirements will be met within three months after the date the applicant will take the examination. The license shall not be issued until all applicable requirements have been met and satisfactorily verified.
  2. An individual who is unable to take an examination at the time scheduled shall notify the board prior to the date of the examination; such an individual shall be rescheduled for the next examination. Failure to notify the board may require the submittal of a new application and payment of fees.
  3. Upon submission of an application for reexamination form provided by the board and payment of the reexamination fee, an applicant who is unsuccessful in passing an examination will be allowed to retake the examination up to two times within two years of the date of notification of initial unsuccessful examination results. If the two-year period elapses, or if an applicant fails to pass both reexaminations, then the applicant will be required to submit a new application with fee in accordance with this chapter in order to take an examination.
  4. Applications for examination and reexamination must be received by the Department of Professional and Occupational Regulation at least 60 days prior to a scheduled examination in order to be eligible to sit for that examination.



**18 VAC 160-20-102. Fees.**

- A. All fees are nonrefundable.
- B. The date of receipt of the fee by the board or its agent is the date that shall be used to determine whether the fee is timely received.
- C. The following fees shall apply:
  - 1. The license application fee shall be \$100.
  - 2. The license renewal fee shall be \$80.
  - 3. The license renewal late penalty fee shall be \$25, in addition to the license renewal fee.
  - 4. The fee for examination or reexamination is subject to charges to the department by an outside vendor based on a contract entered into in compliance with the Virginia Public Procurement Act (§ 2.2-4300 et seq. of the Code of Virginia). Fees may be adjusted and charged to the candidate in accordance with this contract.
- D. A fee of \$25 will be charged, in addition to the fees established in this section, for submitting a check to the board which is dishonored by the institution upon which it is drawn.

**18 VAC 160-20-104. Maintenance of license.**

- A. The licensee shall notify the board in writing within 30 days of any change of name or address.
- B. All licensees shall operate under the name in which the license is issued.

### **PART III.**

#### **RENEWAL.**

##### **18 VAC 160-20-106. Renewal.**

- A. Licenses for waterworks operators shall expire on the last day of February of each odd-numbered year. Licenses for wastewater works operators shall expire on the last day of February of each even-numbered year.
- B. The Department of Professional and Occupational Regulation shall mail a renewal notice to the licensee outlining the procedures for renewal. Renewal notices shall be mailed to the licensee at the last known address of record. Failure to receive written notice shall not relieve the licensee of the obligation to renew and pay the required fee outlined in 18 VAC 160-20-102.
- C. Each licensee applying for renewal shall return the renewal notice, fee, and, in the case of waterworks licensees only, a statement that the applicant for license renewal has met the CPE requirement established in 18 VAC 160-20-109 prior to the expiration date shown on the license. If the licensee fails to receive the renewal notice, a copy of the expired license may be submitted in place of the renewal notice along with the required fee and, in the case of waterworks licensees only, a statement that the licensee has met the CPE requirement in 18 VAC 160-20-109.
- D. The date on which the renewal fee and any required forms are actually received by the board or its agent shall determine whether an additional fee is due.
- E. If the requirements of subsection C of this section are met more than 30 days but less than 12 months after the expiration date on the license, a late penalty fee shall be required as established in 18 VAC 160-20-102. The date on which the renewal application, any required documentation and the required fees are actually received by the board or its agent shall determine whether the licensee is eligible for renewal and whether an additional fee is due.
- F. Any individual who fails to renew his license within 12 months after the expiration date printed on the license shall apply for a new license by examination in accordance with Part II (18 VAC 160-20-74 et seq.) of this chapter. Such individual shall be deemed to be eligible to sit for the examination for the same category and class of license as the expired license.
- G. The board may deny renewal of a license for the same reasons as it may refuse initial licensure or discipline a licensee.

**18 VAC 160-20-109. Waterworks operator continuing profession education (CPE).**

A. Effective with the February 2003 license renewal cycle, each licensed waterworks operator shall have completed the following number of CPE contact hours required for his class of license:

1. Class I, II, and III operators shall obtain a minimum of 20 contact hours during each license renewal cycle.
2. Class IV operators shall obtain a minimum of 16 contact hours during each license renewal cycle.
3. Class V operators shall obtain a minimum of eight contact hours during each license renewal cycle.
4. Class VI operators shall obtain a minimum of four contact hours during each license renewal cycle.

CPE provisions do not apply for the renewal of licenses that were held for less than two years on the date of expiration.

B. The subject matter addressed during CPE contact hours shall be limited to the content areas covered by the board's examination.

C. Any course approved by the board for substitution as training credits or formal education semester hours, as provided for in 18 VAC 160-20-160, shall also be acceptable on an hour-for-hour basis for CPE contact hours. One semester hour of college credit shall equal 15 CPE contact hours, and one quarter hour of college credit shall equal 10 CPE credit hours.

D. The following evidence shall be maintained to document completion of the hours of CPE specified in subsection A of this section:

1. Evidence of completion of a structured training activity which shall consist of the name, address and telephone number of the sponsor;
2. The dates the applicant participated in the training;
3. Descriptive material of the subject matter presented; and
4. A statement from the sponsor verifying the number of hours completed.

E. Each licensee shall maintain evidence of the satisfactory completion of CPE for a period of at least one year following the end of the license renewal cycle for which the CPE

was taken. Such documentation shall be in the form required by subsection D of this section and shall be provided to the board or its duly authorized agents upon request.

- F. The licensee shall not receive CPE credit for the same training course or structured training activity more than once during a single license renewal cycle to meet the CPE requirement unless the same training course or structured training activity is an annual requirement established by Virginia or federal regulations.
- G. The licensee may receive CPE credit for a training course or structured training activity which has been mandated by Virginia or federal regulation towards fulfilling the CPE requirement.
- H. The licensee may petition the board for additional time to meet the CPE requirement. However, CPE hours earned during a license renewal cycle to satisfy the CPE requirement of the preceding license renewal cycle shall be valid only for that preceding license renewal cycle.

**PART IV.**  
**CLASSIFICATION REQUIREMENTS.**

**18 VAC 160-20-120. Waterworks.**

- A. A Class VI waterworks licensee may operate any waterworks as follows:
  - 1. A waterworks providing no treatment and serving fewer than 400 persons; or
  - 2. A waterworks classified by the Virginia Department of Health as a Class VI waterworks.
- B. A Class V waterworks licensee may operate any waterworks as follows:
  - 1. A waterworks serving 400 or more persons which (i) provides no treatment or (ii) employs hypochlorination for disinfection; or
  - 2. A waterworks classified by the Virginia Department of Health as either a Class V or Class VI waterworks.
- C. A Class IV waterworks licensee may operate any waterworks as follows:
  - 1. A waterworks serving fewer than 5,000 persons or having a design hydraulic capacity of less than 0.5 MGD, employing one or more of the following (i) disinfection other than with hypochlorination, (ii) corrosion control, (iii) iron and manganese removal, (iv) ion exchange, (v) membrane technology without pretreatment, (vi) slow sand filtration, (vii) aeration, (viii) rechlorination other than with hypochlorination, or (ix) activated carbon contactors; or
  - 2. A waterworks classified by the Virginia Department of Health as either a Class IV, V, or VI waterworks.
- D. A Class III waterworks licensee may operate any waterworks as follows:
  - 1. A waterworks serving fewer than 5,000 persons or having a design capacity less than 0.5 MGD, employing chemical coagulation or lime softening in combination with one or more of the following (i) sedimentation, (ii) rapid sand filtration with a filtration rate of 2 gpm/square foot or less, (iii) fluoridation, (iv) disinfection, (v) aeration, (vi) corrosion control, or (vii) membrane technologies;

2. A waterworks serving 5,000 or more persons or having a design hydraulic capacity of 0.5 MGD, employing one or more of the following; (i) disinfection other than with hypochlorination, (ii) corrosion control, (iii) iron and manganese removal, (iv) ion exchange, (v) membrane technology without pretreatment, (vi) slow sand filtration, (vii) aeration, (viii) rechlorination other than with hypochlorination, or (ix) activated carbon contactors;
  3. A waterworks employing (i) membrane technology requiring pretreatment consisting of pH adjustment; or (ii) diatomaceous earth filtration, coupled with aeration, corrosion control, disinfection, or fluoridation;
  4. A waterworks employing fluoridation which is not under a higher classification; or
  5. A waterworks classified by the Virginia Department of Health as either a Class III, IV, V or VI waterworks.
- E. A Class II waterworks licensee may operate any waterworks as follows:
1. A waterworks serving 5,000 or more persons but fewer than 50,000 persons or having a design hydraulic capacity of 0.5 MGD or more but less than 5.0 MGD employing chemical coagulation or lime softening in combination with one or more of the following; (i) sedimentation, (ii) rapid sand filtration, (iii) fluoridation, (iv) disinfection, (v) aeration, (vi) corrosion control, or (vii) membrane technologies;
  2. A waterworks serving fewer than 50,000 persons or having a design hydraulic capacity of less than 5.0 MGD which employs chemical coagulation or lime softening coupled with multimedia granular filtration or granular filtration at rates above 2.0 gpm/square foot (high rate filtration) in combination with one or more of the following: (i) sedimentation, (ii) fluoridation, (iii) disinfection, (iv) aeration, or (v) corrosion control;
  3. A waterworks employing biological activated carbon contactors or membrane technology requiring pretreatment other than pH adjustment; or
  4. A waterworks classified by the Virginia Department of Health as either a Class II, III, IV, V or VI waterworks.
- F. A Class I waterworks licensee may operate any waterworks.
- G. The term membrane technologies includes (i) electrical dialysis reversal, (ii) reverse osmosis, (iii) ultra filtration, (iv) micro filtration, and (v) nano filtration.

**18 VAC 160-20-130. Wastewater works.**

A. A Class IV wastewater works licensee may operate any wastewater works as follows:

1. A wastewater works employing natural treatment methods (i.e., those not utilizing aerated or mixed flows and not using electrical or outside energy sources to accomplish treatment) with a design hydraulic capacity greater than 0.4 MGD but equal to or less than 1.0 MGD; or
2. A wastewater works classified by the Virginia Department of Health or the Virginia Department of Environmental Quality as a Class IV wastewater works.

B. A Class III wastewater works licensee may operate any wastewater works as follows:

1. A wastewater works using biological treatment methods consisting of but not limited to (i) suspended growth reactors, (ii) aerated lagoons, (iii) constructed wetlands, (iv) biological filters or other attached growth contactors, (v) processes utilizing biological nutrient control, or (vi) processes utilizing land application having a design hydraulic capacity greater than 0.04 MGD, but equal to or less than 0.5 MGD;
2. A wastewater works using advanced waste treatment methods consisting of but not limited to (i) ammonia stripping, (ii) breakpoint chlorination, (iii) carbon adsorption, (iv) chemical coagulation, (v) flocculation, (vi) precipitation, (vii) filtration, or (viii) demineralization (ion exchange, reverse osmosis or electrodialysis) having a design hydraulic capacity greater than 0.04 MGD, but equal to or less than 0.5 MGD;
3. A wastewater works using combinations of biological and advanced waste treatment methods having a design hydraulic capacity greater than 0.04 MGD, but equal to or less than 0.1 MGD;
4. A wastewater works using natural treatment methods (i.e., those not using aerated or mixed flows and not using electrical or outside energy sources to accomplish treatment) with a design hydraulic capacity greater than 1.0 MGD; or
5. A wastewater works classified by the Virginia Department of Health or the Virginia Department of Environmental Quality as either a Class III or IV wastewater works.

C. A Class II wastewater works licensee may operate any wastewater works as follows:

1. A wastewater works using biological treatment methods consisting of but not limited to (i) suspended growth reactors, (ii) aerated lagoons, (iii) constructed wetlands, (iv) biological filters or other attached growth contactors, (v) processes utilizing biological nutrient control, or (vi) processes utilizing land application having a design hydraulic capacity greater than 0.5 MGD, but equal to or less than 5.0 MGD;
  2. A wastewater works using advanced waste treatment methods consisting of but not limited to (i) ammonia stripping, (ii) breakpoint chlorination, (iii) carbon adsorption, (iv) chemical coagulation, (v) flocculation, (vi) precipitation, (vii) filtration, or (viii) demineralization (ion exchange, reverse osmosis or electrodialysis) having a design hydraulic capacity greater than 0.5 MGD, but equal to or less than 5.0 MGD;
  3. A wastewater works using combinations of biological and advanced waste treatment methods, having a design hydraulic capacity greater than 0.1 MGD, but equal to or less than 2.5 MGD; or
  4. A wastewater works classified by the Virginia Department of Health or the Virginia Department of Environmental Quality as either a Class II, III or IV wastewater works.
- D. A Class I wastewater works licensee may operate any wastewater works.



## **PART V.**

### **STANDARDS OF PRACTICE.**

#### **18 VAC 160-20-140. Discipline.**

The board has the power to discipline and fine any licensee and to suspend or revoke or refuse to renew or reinstate any license as well as the power to deny any application for a license under the provisions of Chapter 23 (§ 54.1-2300 et seq.) of Title 54.1 of the Code of Virginia and this chapter for any of the following:

1. Obtaining or renewing a license through fraudulent means or misrepresentation;
2. Having been convicted or found guilty by a court in any jurisdiction of any felony or of any misdemeanor involving lying, cheating or stealing, or for activities carried out while engaged in waterworks or wastewater works activities, there being no appeal pending therefrom or the time for appeal having lapsed. Any plea of nolo contendere shall be considered a conviction for purposes of this subsection. A certified copy of a final order, decree or case decision by a court or regulatory agency with the lawful authority to issue such order, decree or case decision shall be prima facie evidence of such conviction or discipline. The record of conviction certified or authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such guilt;
3. Not demonstrating reasonable care, judgment, or application of the required knowledge, skill and ability in the performance of the operating duties;
4. Violating or inducing another person to violate any provisions of Chapter 1, 2, 3 or 23 of Title 54.1 of the Code of Virginia, or of any provision of this chapter;
5. Having been found guilty by the board, an administrative body or by a court of any activity in the course of performing his operating duties that resulted in the harm or the threat of harm to human health or the environment;
6. Failing to inform the board in writing within 30 days of pleading guilty or nolo contendere or being convicted or found guilty, regardless of adjudication, of any felony which resulted in the harm or the threat of harm to human health or the environment. Failing to inform the board in writing within 30 days of pleading guilty or nolo contendere or being convicted of or found guilty, regardless of adjudication, of any felony or of any misdemeanor for activities carried out while engaged in waterworks or wastewater works activities or involving lying, cheating or stealing; or
7. Negligence, or a continued pattern of incompetence, in the practice as a waterworks or wastewater works operator.

## **PART VI.**

### **APPROVAL OF TRAINING.**

#### **18 VAC 160-20-160. Approval of training.**

- A. Waterworks and wastewater works operator training for all licenses may be substituted for some of the experience required for Class III, Class II and Class I licenses, subject to the limitations in this section. Training courses that may be substituted for required experience must be approved by the board except those provided by federal or state agencies, institutions, schools and universities approved by the State Council of Higher Education for Virginia, for which continuing education units are awarded. Training courses requiring board approval shall be approved by the board prior to commencing in accordance with the following:
- B. Training courses for which experience credit may be granted must be conducted in general conformance with the guidelines of the International Association for Continuing Education and Training (Association). The board reserves the right to waive any of the requirements of the association's guidelines on a case-by-case basis. Only classroom, laboratory and field trip contact time will be used to compute training credits. No credit will be given for breaks, meals, or receptions.
  - 1. Organization. The board will only approve training offered by a sponsor who is an identifiable organization with a mission statement outlining its functions, structure, process and philosophy, and that has a staff of one or more persons with the authority to administer and coordinate a training credit (TC) program.
  - 2. TC records. The board will only approve training offered by a sponsor who maintains TC records for all participants for a minimum of seven years, and who has a written policy on retention and release of TC records.
  - 3. Instructors. The board will only approve training conducted by personnel who have demonstrated competence in the subject being taught, an understanding of the learning objective, a knowledge of the learning process to be used, and a proven ability to communicate.
  - 4. Objectives. The board will only approve courses that have a series of stated objectives that are consistent with the job requirements of waterworks and wastewater works operators. The training course content must be consistent with those objectives.

5. Course completion requirements. For successful completion of a training course, participants must attend 90% or more of the class contact time and must demonstrate their learning through written examinations, completion of a project, self-assessment, oral examination, or other assessment technique.
- C. The board shall consider the following information, to be submitted by the course sponsor or instructor on forms provided by the board, at least 45 days prior to the scheduled training course:
1. Course information.
    - a. Course title;
    - b. Planned audience;
    - c. Name of sponsor;
    - d. Name, address, phone number of contact person;
    - e. Scheduled presentation dates;
    - f. Detailed course schedule, hour-by-hour;
    - g. List of planned breaks;
    - h. Scheduled presentation location; and
    - i. Relevancy of course to waterworks or wastewater works operator licensing.
  2. Instructor qualifications.
    - a. Name of instructor;
    - b. Title, employer; and
    - c. Summary of qualifications to teach this course.
  3. Training materials.
    - a. Course objectives. A listing of the course objectives stated in terms of the skills, knowledge, or attitude the participant will be able to demonstrate as a result of the training.

- b. Course outline. A detailed outline showing the planned activities that will occur during the training course, including major topics, planned presentation sequence, laboratory and field activities, audio-visual presentation, and other major activities.
    - c. Course reference materials. A list of the name, publisher and publication date for commercially available publications. For reference materials developed by the course sponsor or available exclusively through the course, a copy of the reference.
    - d. Audio-visual support materials. A listing of any commercially available audio-visual support material that will be used in the program. A brief description of any sponsor or instructor generated audio-visual material that will be used.
    - e. Handouts. Identification of all commercially available handout materials that will be used; as well as copies of all other planned handouts.
  - 4. Determination of successful completion. A description of the means that will be used to assess the learning of each participant to determine successful completion of the training program, such as examinations, projects, personal evaluations by the instructor, or other recognized evaluation techniques.
- D. Recurring training programs. If there are plans to present the same course of instruction routinely at multiple locations with only minor modifications and changes, the board may approve the overall program rather than individual presentations if so requested by the sponsor.
- 1. The board shall consider all of the information listed above except those items related to specific offerings of the course.
  - 2. Board approval may be granted for a specific period of time or for an indefinite period.
  - 3. Board approval will apply only to those specific offerings certified by the sponsoring organization as having been conducted by instructors meeting the established criteria and in accordance with the board-approved course outlines and objectives.
  - 4. To maintain approval of the program, changes made to the program since its approval must be submitted.

## **CODE OF VIRGINIA**

Included in this booklet are relevant excerpts from the Code of Virginia. Please note that the Virginia General Assembly is responsible for creating and amending the Code, not the Department of Professional and Occupational Regulation. It is your responsibility to stay informed of revisions to the regulations and the statutes governing your profession or occupation. Please consult the General Assembly or your local library for annual changes.

### **CODE OF VIRGINIA TITLE 54.1.**

#### **CHAPTER 23. WATERWORKS AND WASTEWATER WORKS OPERATORS.**

##### Section

54.1-2300 Definitions.

54.1-2301 Board for Waterworks and Wastewater Works Operators; membership; terms; duties

54.1-2302 License required

##### **§ 54.1-2300. Definitions.**

As used in this chapter, unless the context requires a different meaning:

“Board” means the Board for Waterworks and Wastewater Works Operators.

“Operator” means any individual employed or appointed by any owner, and who is designated by such owner to be the person in responsible charge, such as a supervisor, a shift operator, or a substitute in charge, and whose duties include testing or evaluation to control waterworks or wastewater works operations. Not included in this definition are superintendents or directors of public works, city engineers, or other municipal or industrial officials whose duties do not include the actual operation or direct supervision of waterworks or wastewater works.

“Owner” means the Commonwealth of Virginia, or any political subdivision thereof, any public or private institution, corporation, association, firm or company organized or existing under the laws of this Commonwealth or of any other state or nation, or any person or group

of persons acting individually or as a group, who own, manage, or maintain waterworks or wastewater works.

“Person” means any individual, group of individuals, a corporation, a partnership, a business trust, an association or other similar legal entity engaged in operating waterworks or wastewater works.

“Wastewater works” means each system of (i) sewerage systems or sewage treatment works, serving more than 400 persons, as set forth in § [62.1-44.18](#); (ii) sewerage systems or sewage treatment works serving fewer than 400 persons, as set forth in § [62.1-44.18](#), if so certified by the State Water Control Board; and (iii) facilities for discharge to state waters of industrial wastes or other wastes, if certified by the State Water Control Board.

“Waterworks” means each system of structures and appliances used in connection with the collection, storage, purification, and treatment of water for drinking or domestic use and the distribution thereof to the public, except distribution piping. Systems serving fewer than 400 persons shall not be considered to be a waterworks unless certified by the Board to be such.

**§ 54.1-2301. Board for Waterworks and Wastewater Works Operators; membership; terms; duties.**

- A. The Board for Waterworks and Wastewater Works Operators shall consist of seven members as follows: the Director of the Office of Water Programs of the State Department of Health, or his designee, the Executive Director of the State Water Control Board, or his designee, a currently employed waterworks operator having a valid license of the highest classification issued by the Board, a currently employed wastewater works operator having a valid license of the highest classification issued by the Board, a faculty member of a state university or college whose principal field of teaching is management or operation of waterworks or wastewater works, a representative of an owner of a waterworks, and a representative of an owner of a wastewater works. No owner shall be represented on the Board by more than one representative or employee operator. The term of Board members shall be four years.
- B. The Board shall examine operators and issue licenses. The licenses may be issued in specific operator classifications to attest to the competency of an operator to supervise and operate waterworks and wastewater works while protecting the public health, welfare and property and conserving and protecting the water resources of the Commonwealth.

**§ 54.1-2302. License required.**

No person shall operate a waterworks or wastewater works without a valid license.